

behind the Glas at *a*, from whence any Rays AB, AC, AD, which flow from one and the same Point of the Object, do after their Reflexion made in the Points B, C, D, diverge in going from the Glas to E, F, G, where they are incident on the Spectator's Eyes. For these Rays do make the same Picture in the bottom of the Eyes as if they had come from the Object really placed at *a* without the interposition of the Looking-glass; and all Vision is made according to the place and shape of that Picture.

Fig. 2. In like manner the Object D seen through a Prism appears not in its proper place D, but is thence translated to some other place *d* situated in the last refracted Ray FG drawn backward from F to *d*.

Fig. 10. And so the Object Q seen through the Lens AB, appears at the place *q* from whence the Rays diverge in passing from the Lens to the Eye. Now it is to be noted, that the Image of the Object at *q* is so much bigger or lesser than the Object it self at Q, as the distance of the Image at *q* from the Lens AB is bigger or less than the distance of the Object at Q from the same Lens. And if the Object be seen through two or more such Convex or Concave-glasses, every Glas shall make a new Image, and the Object shall appear in the place and of the bigness of the last Image. Which consideration unfolds the Theory of Microscopes and Telescopes. For that Theory consists in almost nothing else than the describing such Glasses as shall make the last Image of any Object as distinct and large and luminous as it can conveniently be made.

I have now given in Axioms and their Explications the sum of what hath hitherto been treated of in Opticks. For what hath been generally agreed on I content myself to assume under the notion of Principles, in order to what I have further to write. And this may suffice for an

Intro-

Introduction to Readers of quick Wit and good Understanding not yet versed in Opticks: Although those who are already acquainted with this Science, and have handled Glasses, will more readily apprehend what followeth.

PROPOSITIONS.

PROP. I. Theor. I.

LIGHTS which differ in Colour, differ also in Degrees of Refrangibility.

The Proof by Experiments.

Exper. 1. I took a black oblong stiff Paper terminated by Parallel Sides, and with a Perpendicular right Line drawn cross from one Side to the other, distinguished it into two equal Parts. One of these Parts I painted with a red Colour and the other with a blew. The Paper was very black, and the Colours intense and thickly laid on, that the Phenomenon might be more conspicuous. This Paper I viewed through a Prism of solid Glas, whose two Sides through which the Light passed to the Eye were plane and well polished, and contained an Angle of about Sixty Degrees: which Angle I call the refracting Angle of the Prism. And whilst I viewed it, I held it before a Window in such manner that the Sides of the Paper were parallel to the Prism, and both those Sides and the Prism parallel to the Horizon, and the cross Line perpendicular to it; and that the Light which fell from the Window

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